REMARKS

The Office Action of March 11, 2004 presents the examination of claims 35-54. The present paper amends claims 50 and 54.

Information Disclosure Citation

The Examiner has not provided Applicant with an initialed copy of the PTO-1449 form filed with the Information Disclosure Statement filed January 13, 1999. An initialed copy thereof is respectfully requested from the Examiner with the next Office communication.

Rejection under 35 USC § 112, second paragraph

Claims 50-54 stand rejected under 35 USC § 112, second paragraph, as allegedly being indefinite. The Examiner indicates that the phrase, "a medium comprising at least one auxin and that induces dedifferentiation" is somehow unclear as to whether it is the medium or the auxin that induces dedifferentiation. While Applicants disagree, claims 50 and 54 are amended to expressly state that it is the medium that induces dedifferentiation.

Rejection under 35 USC § 112, first paragraph

Claims 43 and 49 stand rejected under 35 USC § 112, first paragraph, for alleged lack of enablement. This rejection is

respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Examiner takes a position that the plasmids pTOK162 and pTiBo542 are not reproducible from readily available starting materials by the teachings of the specification. Applicants do not agree with this position, as has been explained in previous papers. However, to advance the prosecution of the application, Applicants are in the process of depositing the vector pTOK162 under the terms and conditions of the Budapest Treaty. It is believed that such deposit will be completed prior to issuance of any U.S. Patent from the present application.

The Examiner is reminded that the "virulence region" of the plasmid pTOK162 is the same as the "virulence region" of the plasmid pTiBo542, at least as to *VirB, VirC and VirG* genes, as is described in the specification at page 12, line 24 to page 14, line 4.

Accordingly, Applicants believe that the instant rejection is fully addressed by the deposit of the plasmid pTOK162 under the terms and conditions of the Budapest Treaty.

Rejection under 35 USC § 102(b)

Claims 35, 36, 40-42, 44, 46, 50-52 and 54 are rejected under 35 USC § 102(b) as anticipated by Dale et al. This rejection is

respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Examiner characterizes Dale as describing a method for transforming wheat comprising culturing seedlings or immature embryos in a medium comprising the auxin 2,4-D, coculturing the plant tissue with *Agrobacterium tumefaciens* C58 nal^r comprising a nucleotide sequence of interest from wheat dwarf virus (wdv) and culturing selected tissue to obtain transformed wheat plants.

However, the Examiner's characterization of the reference is incorrect. First, to obtain a transformed plant, there must be integration of the transforming DNA into the chromosome of the transformed plant cell. Dale does not demonstrate this. Dale does use DNA dot blotting, ELISA detection of wdv proteins, and development of symptoms to show introduction of wdv DNA into the plant cells, but this could be the result of non-integrated viral DNA being present in the plant cells. Thus, Dale only shows that foreign DNA of the wdv was introduced into the wheat plant cells; no regenerated transformed plants grown from transformed cultured embryos are demonstrated.

Second, the Examiner states that Dale describes culture of immature embryo cells on a medium containing the auxin 2,4-D, then co-culture with *Agrobacterium* for transformation. However, this is incorrect. Dale et al. use a medium containing 2,4-D to grow tobacco cells in suspension. The tobacco cell-conditioned medium

was then used to culture the *Agrobacterium* used for the transformation.

The embryo cells transformed by Dale et al. were prepared by drying whole seeds on sterile filter paper, then dissecting the embryos and drying them in a petri dish containing silica gel. The dried embryos were then contacted with the *Agrobacterium* cell suspension for one hour, then cultured in MS medium containing sucrose for 3 days. (*See*, page at the bottom of col. 1 to the top of col. 2, and page 239 at "(4) embryo vacuum infiltration".)

Thus, Dale et al. do not "culture an explant … in a medium containing at least one auxin…" before contacting the plant tissue with *Agrobacterium* containing a polynucleotide of interest. Accordingly, the presently claimed invention is distinct from what is described by Dale et al. and the instant rejection of claims 35, 36, 40-42, 44, 46, 50-52 and 54 under 35 USC § 102(b) as anticipated by Dale et al. should be withdrawn.

Rejection under 35 USC § 103(a)

Claims 35, 36, 40-42, 44, 46, 47, 50-52 and 54 are rejected under 35 USC § 103(a) as being unpatentable over Dale et al. in view of Fraley et al. and Grimsley et al. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

Applicants submit that the Examiner fails to establish *prima facie* obviousness of the claimed invention. The cited references do not disclose or suggest each and every limitation of the rejected claims.

The Examiner cites Dale et al. for the basic principle of the invention of culturing a tissue explant on a medium containing an auxin, thereby obtaining a dedifferentiated tissue that is susceptible to transformation by *Agrobacterium*. Fraley is cited for the amount of *Agrobacterium* to use in the co-culturing step (10^8 cells). Grimsley is cited for the proposition that one could apply the method of Dale to maize plants as well as to wheat plants.

As explained above, Dale et al. do not describe or suggest the basic principle of the presently claimed invention. Neither Fraley et al. nor Grimsley et al. disclose or suggest the concept that a tissue of a plant should be cultured in a medium containing at least one auxin and then contacted with *Agrobacterium* harboring a gene of interest to effect transformation of the plant cells. Therefore, no combination of Dale with Fraley and Grimsley discloses or suggests every element of the present invention. Accordingly, the instant invention is not *prima facie* obvious over the cited references and the rejection of claims 35, 36, 40-42, 44, 46, 47, 50-52 and 54 under 35 USC § 103(a) as being unpatentable

over Dale et al. in view of Fraley et al. and Grimsley et al. should be withdrawn.

The present application well-describes and claims patentable subject matter. The favorable action of allowance of the pending claims and passage of the application to issue is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mark J. Nuell (Reg. No. 36,623) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a two (2) month extension of time for filing a response in connection with the present application. The required fee of $420.00 is being filed concurrently with the Notice of Appeal.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____
Mark J. Nuell, #36,623

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

DRN/mua
0760-0262P

Attachment(s)